CLAIMS

1. Process for preparation of a catalyst that comprises zinc aluminate and that corresponds to the formula:

$$ZnAl_2O_4, x\ ZnO, y\ Al_2O_3$$

whereby x and y are encompassed between 0 and 2, characterized by the fact that it successively comprises:

- A stage (a) in which the amount of zinc oxide that is necessary to the formation of said catalyst, in which at least a portion of the zinc oxide is replaced by an equivalent amount of at least one zinc salt that is selected from among the nitrate and the carbonate, is mixed with water and nitric acid;
- A stage (b) in which the mixture that was previously obtained is mixed with an alumina gel that is peptized in the presence of a water/nitric acid mixture, so as to form a paste;
- A stage (c) in which the paste that is obtained from the mixing stage is extruded under pressure;
- A stage (d) in which the extruded paste is dried in two successive phases, the first at a temperature of less than 100°C, and the second at a temperature of at least 100°C;
- And a stage (e) in which the extruded and dried paste is calcined.

2. Process according to claim 1, characterized in that stage (a) is carried out over a period encompassed between 30 and 60 minutes in a container that is equipped with a stirring mechanism until the consistency of a thick cream is achieved.

3. Process according to one of claims 1 and 2, wherein mixing stage (b) is carried out in a mixer-extruder.

4. Process according to claim 3, wherein into stage (b), the alumina gel to which the mixture of zinc salt, if necessary zinc oxide, and water/nitric acid is added is introduced in a first step, whereby the mixing time is encompassed between 60 and 120 minutes.

5. Process according to claim 3 or 4, wherein during the mixing, the temperature gradually rises to reach a value of between 60 and 65°C.

6. Process according to one of claims 3 to 5, wherein water is added during the mixing to reach a suitable consistency of the paste.

7. Process according to one of claims 1 to 6, wherein stage (c) consists in extruding the paste that is thus obtained from a die with a diameter of between 1.5 and 3.7 mm of diameter.

8. Process according to claim 8, wherein in stage (c), a pressure of higher than 2 MPa is exerted on the die so as to obtain compact extrudates that have a flawless surface condition.

9. Process according to one of claims 7 and 8, wherein when, at the end of the operation, the pressure again becomes less than 2 MPa, the recovered extrudates are not preserved.

10. Process according to one of claims 1 to 9, wherein drying stage (d) is carried out in a ventilated oven.

11. Process according to claim 10, wherein said first drying phase is operated at about 80°C for 3 hours, then said second drying phase is operated in two stages, at 100°C for about 2 hours and then at about 150°C for about 2 hours.

12. Process according to one of claims 1 to 11, wherein stage (e) is carried out at a temperature of between 400 and 700°C for a period of between 2 and 4 hours.

13. Process according to claim 12, wherein stage (e) is carried out at a temperature of about 700°C for about 2 hours with a temperature rise gradient encompassed between 3 and 6°C/minute.

14. Catalyst that comprises zinc aluminate and that corresponds to the formula:

$$ZnAl_2O_4, x\ ZnO, y\ Al_2O_3$$

whereby x and y are encompassed between 0 and 2, obtained by a process according to one of claims 1 to 13.

15. Catalyst according to claim 14, wherein it exhibits a residual zincite content, measured by X diffraction, less than 2% by mass.